What is claimed is:

1.   A misfire detecting apparatus for an internal combustion engine, comprising:

an operating condition detector detecting engine operating conditions inclusive of an engine rotation speed; and

a calculating section that judges whether or not a misfire occurred, based on the engine rotation speed detected by said operating condition detector, to output a misfire judgment signal,

wherein said calculating section:

calculates diagnosis data indicating a variation of said engine rotation speed and also calculates a threshold based on said engine operating conditions, and judges whether or not a misfire occurred, based on the comparison between said diagnosis data and said threshold; and also

calculates a correction value for correcting said threshold based on data indicating an average correlation between said diagnosis data and said threshold, to correct said threshold with said correction value.

2.   A misfire detecting apparatus for an internal combustion engine according to claim 1,

wherein said calculating section calculates a ratio between an average value of said diagnosis data and an average value of said threshold, as said data indicating the average correlation.

3.   A misfire detecting apparatus for an internal combustion engine according to claim 1,

wherein said calculating section calculates an average value of ratios between said diagnosis data and said threshold, as said data indicating the average correlation.

4.   A misfire detecting apparatus for an internal combustion engine according to claim 1,

wherein said calculating section calculates a correction value, which corrects said threshold to be larger as said diagnosis data averagely approaches said threshold.

5.   A misfire detecting apparatus for an internal combustion engine according to claim 1,

wherein said calculating section eliminates said diagnosis data and said threshold for when said diagnosis data is equal to or above said threshold, from samples for calculating said data indicating the average correlation.

6.	A misfire detecting apparatus for an internal combustion engine according to claim 5,

	wherein said calculating section prohibits an update of said correction value on the basis of said data indicating the average correlation, when the number of samples of said diagnosis data and said threshold used for the calculation of said data indicating the average correlation is less than a predetermined value.

7.	A misfire detecting apparatus for an internal combustion engine according to claim 1,

	wherein said calculating section cancels the misfire judgment, based on said data indicating the average correlation between said diagnosis data and said threshold.

8.	A misfire detecting apparatus for an internal combustion engine according to claim 7,

	wherein said calculating section prohibits said cancellation process, when a misfire frequency during a period of time where said data indicating the average correlation is obtained, is equal to or above a predetermined value.

9.	A misfire detecting apparatus for an internal combustion engine according to claim 1,

	wherein said calculating section obtains said data indicating the average correlation, as an average value per the predetermined number of ignitions.

10.	A misfire detecting apparatus for an internal combustion engine, comprising:
	means for detecting engine operating conditions inclusive of an engine rotation speed;
	means for calculating diagnosis data indicating a variation of said engine rotation speed;
	means for calculating a threshold based on said engine operating conditions;
	means for judging whether or not a misfire occurred, based on the comparison between said diagnosis data and said threshold;
	means for calculating data indicating an average correlation between said diagnosis data and said threshold;
	means for calculating a correction value for correcting said threshold based on said data indicating the average correction between said diagnosis data and said threshold; and
	means for correcting said threshold with said correction value.

11.   A misfire detecting method for an internal combustion engine, comprising the steps of:

   detecting engine operating conditions inclusive of an engine rotation speed;

   calculating diagnosis data indicating a variation of said engine rotation speed;

   calculating a threshold based on said engine operating conditions;

   judging whether or not a misfire occurred, based on the comparison between said diagnosis data and said threshold;

   calculating data indicating an average correlation between said diagnosis data and said threshold;

   calculating a correction value for correcting said threshold based on said data indicating the average correction between said diagnosis data and said threshold; and

   correcting said threshold with said correction value.

12.   A misfire detecting method for an internal combustion engine according to claim 11,

   wherein said step of calculating the data indicating the average correlation;

   calculates a ratio between an average value of said diagnosis data and an average value of said threshold, as said data indicating the average correlation.

13.   A misfire detecting method for an internal combustion engine according to claim 11,

   wherein said step of calculating the data indicating the average correlation;

   calculates an average value of ratios between said diagnosis data and said threshold, as said data indicating the average correlation.

14.   A misfire detecting method for an internal combustion engine according to claim 11,

   wherein said step of calculating the correction value;

   calculates a correction value, which corrects said threshold to be larger as said diagnosis data averagely approaches said threshold.

15.   A misfire detecting method for an internal combustion engine according to claim 11,

   wherein said step of calculating the data indicating the average correlation;

   eliminates said diagnosis data and said threshold for when said diagnosis data is equal to or above said threshold, from samples for calculating said data indicating the average correlation.

16.   A misfire detecting method for an internal combustion engine according to claim 15, further comprising the step of;

prohibiting the cancellation of misfire judgment on the basis of said data indicating the average correlation, when the number of samples of said diagnosis data and said threshold used for the calculation of said data indicating the average correlation is less than a predetermined value.

17. A misfire detecting means for an internal combustion engine according to claim 11, further comprising the step of;

canceling the misfire judgment, based on said data indicating the average correlation between said diagnosis data and said threshold.

18. A misfire detecting method for an internal combustion engine according to claim 17, further comprising the step of;

prohibiting the cancellation of misfire judgment, when a misfire frequency during a period of time where said average correlation is obtained, is equal to or above a predetermined value.

19. A misfire detecting method for an internal combustion engine according to claim 11,

wherein said step of calculating the data indicating the average correlation;

calculates said data indicating the average correlation, as an average value per the predetermined number of ignitions.

16